GE Consumer and Industrial

Environmental, Health & Safety
Appliance Park, AP1-D31, Louisville, KY 40225

August 13, 2008

Kentucky Department of Environmental Protection
Division of Water
ATTN: Sara Beard
14 Reilly Road
Frankfort, Kentucky 40601

Re: KPDES KY0041726
KPDES Form SC Permit Application Submittal

Ms. Beard:

Enclosed you will find KPDES Form SC Permit Application for the GE Consumer and Industrial Appliance Park facility in Louisville, KY. This form is being submitted as an addition to the original permit renewal application submitted on July 5, 2007.

After an internal records review and phone conversations that between Will Tucker (GE) and Ronnie Thompson (DOW) and yourself, it was determined that Form SC also needed to be submitted. This submittal is to fulfill the regulatory obligation so that non-contact cooling water and a sodium hypochlorite solution used to control algae growth at the retention pond may be discharged to the combined outfall. Attached you will also find copies of MSDS for the chemicals used in the park cooling towers.

Please note that Outfall 001 is a stormwater discharge from a 16-acre retention pond and a stormwater runoff from closed landfills (old outfall 002). Outfall 001 and 002 were combined in November 1999 to form the new outfall 001.

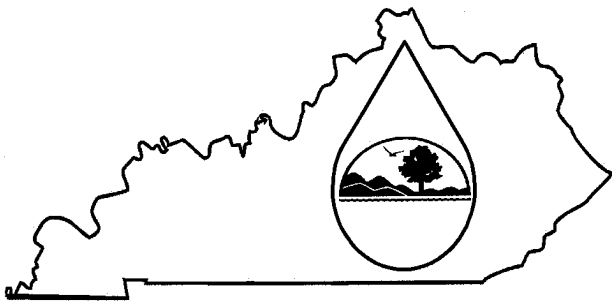
Please feel free to call Will Tucker at (502) 457-5479 or myself at (502) 452-5745 if you have any questions regarding this matter.

Sincerely,

Shawn Tomes
Leader of Environmental Protection

Enclosures

KPDES FORM SC



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT APPLICATION

A complete application consists of this form and Form 1.
For additional information, contact: KPDES Branch, (502) 564-3410.

NAME OF FACILITY: GE Appliance Park

I. FACILITY DISCHARGE FREQUENCY	AGENCY USE							

A. Do discharge(s) occur all year? Yes ☐ No ☒
(Complete Item IX for intermittent discharges.)

B. How many days per week?

II. A. Give the basis of design for sizing of the wastewater facility (see instructions): N/A

B. If new discharger, indicate anticipated discharge date:

C. Indicate the design capacity of the treatment system: N/A MGD

III. Outfall Location (see instructions)

Outfall	LATITUDE			LONGITUDE			
(list)	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	RECEIVING WATER (name)
001	38	9	37.8	85	39	33.8	Unnamed tributary to Blue Spring Ditch to Northern Ditch to Pond Creek

Method used to obtain latitude/longitude (i.e. GPS unit, USGS topographic map coordinates, etc.): Topographic Map

IV. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES (see instructions)
If wastewater other than domestic or sanitary is listed, complete page 4 in addition to page 1 and 2.

OUTFALL NO. (list)	OPERATION(S) CONTRIBUTING FLOW		TREATMENT	
	Operation (list)	Avg/Design Flow (include units)	List treatment components	List Codes from Table SC-1
001	Stormwater Runoff /Non-Contact Cooling Water	1.6 MGD avg. flow during discharge	Sedimentation, Sorption, Holding or Detention Pond, Discharge to Surface Water	1-U, 1-X, 3-N, 4-A

V. Check the type(s) of wastewater discharged.

☐	Domestic (60% or more sanitary sewage)	☐	Oil field waste
☒	Noncontact cooling water	☒	Other (list): Stormwater

VI. Does all water used at facility (except for human consumption) flow to a treatment plant? ☐ **Yes** ☒ **No**

VII. Discharge to other than surface waters. Check appropriate location:

☐	Publicly-owned lake or impoundment	Name of lake:
☒	Publicly-owned treatment works (POTW).	Name of POTW: Louisville & Jefferson County Metropolitan Sewer District
☐	Land application of Effluent	
☐	Surface injection (Check term and identify on map) ☐ lateral field; ☐ sinkhole; ☐ sinking stream; ☐ deep well	
☐	Closed Circuit (Check appropriate term) ☐ Holding tank; ☐ Mechanical evaporation; ☐ Waste impoundment	

VIII. Check the metals present in the discharge if applicable and indicate the quantity discharged per year. (Indicate units).

☐	Antimony		☒	Copper	Estimated Total Recoverable (TR) 4.41 lbs/yr	☐	Silver	
☐	Arsenic		☐	Lead		☐	Thallium	
☐	Beryllium		☐	Mercury		☒	Zinc	Estimated (TR) 13.23 lbs/yr
☐	Cadmium		☐	Nickel		☒	Iron	Estimated (TR) 458.81 lbs/yr
☐	Chromium		☐	Selenium		☐		

IX. INTERMITTENT DISCHARGES (Complete this section for intermittent discharges.)

A. Number of bypass points:	N/A	(If bypass points are indicated, information below must be completed for each bypass.)

Check when bypass occurs:	☐ Wet Weather	☐ Dry Weather
Give the number of bypass incidents	per year	per year
Give average duration of bypass	hours	hours
Give average volume per incident	1,000 gallons	1,000 gallons
Give reason why bypass occurs:		

B. Number of Overflow Points: N/A (If discharge is from an overflow point, the information below must be completed.)

Check when overflow occurs:	☐ Wet Weather	☐ Dry Weather
Give the number of overflow incidents:	per year	per year
Give average duration of overflow:	hours	hours
Give average volume per incident:	1,000 gallons	1,000 gallons

C. Number of seasonal discharge points	1
Give the number of times discharge occurs per year	Approximately 48
Give the average volume per discharge occurrence	1.1 MGD
Give the average duration of each discharge	8 (hours)
List month(s) when the discharge occurs	Variable

X. AREA SERVED (see instructions)

NAME	ACTUAL POPULATION SERVED
N/A	
TOTAL POPULATION SERVED	

(PLEASE COMPLETE THIS PAGE IF OTHER THAN DOMESTIC WASTEWATER IS DISCHARGED)

XI. COOLING WATER ADDITIVES AND THEIR COMPOSITIONS

Additive	Composition	Concentration (mg/l)
Continuum AEC3152	Sodium Hydroxide and Chlorotolyltriazole Sodium Salt	77 – 95 mg/L
Spectrus NX1106	Magnesium Nitrate 1% to 5%, 5-chloro-2-methyl-4-isothiazolin-3-one 1% to 5%	60-80 mg/L
Spectrus OX103 / OX1200	Sodium Bromide	0.3 – 1.0 mg/L
Spectrus NX114 – Closed Loop Chillers	2-bromo-2-nitropropane-1.3-diol 5% to 10%, magnesium nitrate 3% to 7%, 5-chloro-2-methyl-4-isothiazolin-3-one 1% to 5%, magnesium chloride	15 - 90 mg/L
Sodium Hypochlorite 12.5% Solution (to Mill Pond only as algaecide treatment)	Sodium Hypochlorite 12.5%	0.2-0.4 mg/L

XII. EFFLUENT CHARACTERISTICS

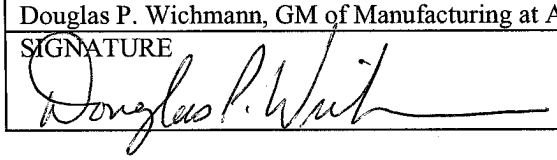
A. Indicate results of analysis for pollutants listed below.

POLLUTANT/PARAMETER	MAX DAILY VALUE	AVG DAILY VALUE	NUMBER OF SAMPLES
BOD_5	34 mg/L		1
TOTAL SUSPENDED SOLIDS	53 mg/L	24 mg/L	12
FECAL COLIFORM	790 #colonies/100ml		1
TOTAL RESIDUAL CHLORINE	<0.02		1
OIL AND GREASE	10 mg/L	5.6 mg/L	12
CHEMICAL OXYGEN DEMAND	38 mg/L		1
TOTAL ORGANIC CARBON	9.2 mg/L		1
AMMONIA	0.12 mg/L		1
DISCHARGE FLOW	20 MGD	3.17 MGD	12
pH	8.9 SU	7.7 SU	12
TEMPERATURE (WINTER)	14 degrees C	11.15 degrees C	4
TEMPERATURE (SUMMER)	26 degrees C	23.7 degrees C	2

B. Frequency and duration of flow:	Variable frequency and duration for discharge of stormwater and non-contact cooling water from retention pond.

XIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (type or print):	TELEPHONE NUMBER (area code and number):
Douglas P. Wichmann, GM of Manufacturing at Appliance Park	502-452-7863
SIGNATURE 	DATE 8/12/2008

GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 02-SEP-2005

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

SPECTRUS OX103

PRODUCT APPLICATION AREA:

BIOCIDE

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
16079-88-2	1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN Oxidizer; irritant (eyes and skin)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

DANGER

Moderately irritating. May be corrosive in contact with moist skin. Severe irritant to the eyes. Dusts cause irritation to the upper respiratory tract.

DOT hazard: Oxidizer
Emergency Response Guide #140
Odor: Halogen; Appearance: White, Tablets

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: Flood with water. Use of CO2 or foam may not be effective.

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POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Moderately irritating. May be corrosive in contact with moist skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Dusts cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause severe irritation or burning of the gastrointestinal tract.

TARGET ORGANS:
Repeated skin contact may cause sensitization.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

4 FIRST AID MEASURES

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:
Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
Flood with water. Use of CO2 or foam may not be effective.
HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
FLASH POINT:
> 200F > 93C P-M(CC)
MISCELLANEOUS:
Oxidizer
UN1479;Emergency Response Guide #140

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Product releases chlorine when wet. Spill residue may be neutralized with 3% hydrogen peroxide solution.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Dispose of in approved pesticide facility or according to label instructions.

7 HANDLING & STORAGE

HANDLING:
Oxidizer. Avoid all contact with reducing agents, oils, greases, organics and acids.
STORAGE:
Keep containers closed when not in use. Keep dry. Do not store at high temperature or near oxidizables or combustibles.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters.
SKIN PROTECTION:
gauntlet-type neoprene gloves, chemical resistant apron--

Wash off after each use. Replace as necessary.

EYE PROTECTION:

airtight chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Density	60.000 lb/cu.	Vapor Pressure (mmHG)	< 1.0
Freeze Point (F)	NA	Vapor Density (air=1)	< 1.00
Freeze Point (C)	NA		
Viscosity(cps 70F,21C)	NA	% Solubility (water)	0.2

Odor		Halogen
Appearance		White
Physical State		Tablets
Flash Point	P-M(CC)	> 200F > 93C
pH 5% Disp. (approx.)		4.7
Evaporation Rate (Ether=1)		< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Slowly releases halogen gases when contaminated with moisture. May react with alkalies, acids, organics or reducing agents.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: 578 mg/kg

NOTE - 600 mg/kg per alt. source; dehalogenated byproduct Rat Oral LD50: >4,000 mg/kg

Teratology RAT:

NOTE - Dehalogenated byproduct study had terata (secondary) at maternal toxic doses

Reproductive Toxicity RAT: 4,500 mg/kg/day

NOTE - Dehalogenated byproduct study had no adverse reproductive toxicity

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Alternate source concurs

Inhalation LC50 RAT: 1.88 mg/L/4hr

NOTE - >3.2 mg/L/4hr at 100 ppm (no deaths) per alternate source

Skin Irritation Score RABBIT: 6.1

NOTE - 6.98 per alternate source; reversible; dehalogenated byproduct score: 0.8

Eye Irritation Score RABBIT: 103

NOTE - 14 Day-irreversible-max.at day 3; dehalogenated byproduct score: 12.8-reversible

90 Day Feed Study RAT:

NOTE - Dehalogenated byproduct 90-day oral LD50: >2,000 mg/kg/day

Skin Sensitization G.PIG: POSITIVE

NOTE - Buehler Test; dehalogenated byproduct was negative in Buehler Test

Ames Assay BACTERIA: NEGATIVE

NOTE - +/- Metabolic activation; dehalogenated byproduct: negative

Non-Ames Mutagenicity YEAST: NEGATIVE

NOTE - Dehalogenated byproduct negative for: Mouse Lymphoma, SCE, Cell transformation

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

American Oyster 96 Hour Static Acute Bioassay
LC50 Greater Than= 640; No Effect Level= 12 mg/L

Daphnia magna 21 Day Chronic Bioassay
Reproduction NOEL= .06 mg/L

Daphnia magna 48 Hour Static Acute Bioassay
LC50= .49; No Effect Level= .32 mg/L

Fathead Minnow 96 Hour Static Acute Bioassay
LC50= 2.43; No Effect Level= 1.83 mg/L

Grass Shrimp (Palaemonetes pugio) 96 Hour Static Acute Bioassay
LC50= 14; No Effect Level= 6.5 mg/L

Rainbow Trout 96 Hour Static Acute Bioassay
LC50= .94; No Effect Level= .54 mg/L

Sheepshead Minnow 96 Hour Static Acute Bioassay
LC50= 21.6; No Effect Level= 12.1 mg/L

BIODEGRADATION

BOD-28 (mg/g): 11
BOD-5 (mg/g): 6
COD (mg/g): 920
TOC (mg/g): 250

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D001=Ignitable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD: Oxidizer
UN / NA NUMBER: UN1479
DOT EMERGENCY RESPONSE GUIDE #: 140

15 REGULATORY INFORMATION

TSCA:

This is an EPA registered biocide and is exempt from TSCA inventory requirements.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FIFRA REGISTRATION NUMBER:

5185-420-3876

FOOD AND DRUG ADMINISTRATION:

The ingredients in this product are approved by FDA under 21 CFR 176.300.

USDA FOOD PLANT APPROVALS:

This product is composed of ingredients previously approved by USDA to meet G5 and G7 classification and may be used in water for cooking/cooling or in boiler or cooling systems with no food contact.

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic);Fire;Reactive

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	1	Slight Hazard
Special	OXY	DOT or NFPA Oxidizer
(1) Protective Equipment	C	Goggles,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	06-OCT-1997		** NEW **
	09-SEP-1998	15	06-OCT-1997
	14-SEP-1999	;EDIT:9	09-SEP-1998
	21-APR-2000	4	14-SEP-1999
	22-SEP-2000	8	21-APR-2000
	06-DEC-2000	12	22-SEP-2000
	03-JAN-2001	15	06-DEC-2000
	22-MAR-2001	15	03-JAN-2001
	18-FEB-2002	3,4	22-MAR-2001
	19-FEB-2002	3,4	18-FEB-2002
	20-FEB-2002	3,4	19-FEB-2002
	02-SEP-2005	16	20-FEB-2002

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 29-JUN-2007
Supercedes: 22-MAR-2007

SPECTRUS NX1106

1 Identification of Product and Company

Identification of substance or preparation
SPECTRUS NX1106

Product Application Area
Water-based microbial control agent.

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: 215 355-3300

2 Composition / Information On Ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range (w/w%)
10377-60-3	MAGNESIUM NITRATE Oxidizer; irritant (eyes and skin)	1-5
26172-55-4	5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE Corrosive; toxic (by ingestion and skin absorption); sensitizer (skin)	1-5

3 Hazards Identification

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EMERGENCY OVERVIEW

DANGER

Corrosive to skin. Skin sensitizer with delayed onset of symptoms. Corrosive to the eyes. Mists/aerosols cause irritation to the upper respiratory tract.

DOT hazard: Corrosive to skin

Odor: Slight; Appearance: Light Yellow To Green, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

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POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Corrosive to skin. Skin sensitizer with delayed onset of symptoms.

ACUTE EYE EFFECTS:
Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in very large doses.

TARGET ORGANS:
Prolonged or repeated exposures may cause tissue necrosis and/or skin sensitization.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Direct contact with skin will cause severe delayed skin reactions or burns if not washed off immediately- follow first aid instructions.

4 First Aid Measures

SKIN CONTACT:
URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:
If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 Fire Fighting Measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:
oxides of carbon, nitrogen, and sulfur; and hydrogen chloride

FLASH POINT:
> 200F > 93C P-M(CC)

MISCELLANEOUS:
Corrosive to skin
UN 3265;Emergency Response Guide #153

6 Accidental Release Measures

PROTECTION AND SPILL CONTAINMENT:
WARNING: Keep spills and clean-up residuals out of municipal sewers and open bodies of water. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Dispose of in approved pesticide facility or according to label instructions.

7 Handling & Storage

HANDLING:
Contains an oxidizer. Avoid all contact with reducing agents, oils, greases, organics and acids. Corrosive to skin and/or eyes.

STORAGE:
Keep containers closed when not in use. Store between 20-100F for no more than 6 months. Store upright in original vented containers. Product evolves CO2 slowly. Store samples in plastic bottles due to pressure build-up.

8 Exposure Controls / Personal Protection

EXPOSURE LIMITS

CHEMICAL NAME

MAGNESIUM NITRATE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED
MISC: Note-mfg. sugg. exp. limit:0.1 mg/m3 TWA;0.3mg/m3 STEL total isothiazoline).

8) **EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use organic vapor cartridges and any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:
gauntlet-type butyl gloves, chemical resistant apron-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles, face shield

9 Physical & Chemical Properties

Specific Grav.(70F,21C)	1.033	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	28	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-2		
Viscosity(cps 70F,21C)	8	% Solubility (water)	100.0

Odor		Slight
Appearance		Light Yellow To Green
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		3.0
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability & Reactivity

STABILITY:
Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:
Will not occur.

INCOMPATIBILITIES:
May react with organics or reducing agents.

DECOMPOSITION PRODUCTS:
oxides of carbon, nitrogen, and sulfur; and hydrogen chloride

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11 Toxicological Information

Oral LD50 RAT:	>5,000 mg/kg
Teratology :	NEGATIVE
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	
Skin Sensitization HUMAN:	POSITIVE
Non-Ames Mutagenicity :	NEGATIVE

12 Ecological Information

AQUATIC TOXICOLOGY

Bluegill Sunfish 96 Hour Static Acute Bioassay
LC50= 12.1; No Effect Level= 6.5 mg/L
Daphnia magna 48 Hour Flow-Thru Bioassay
LC50= 2.9; 10% Mortality= .6 mg/L
Fathead Minnow 36 Day Early Life Stage Test
LOEC= 4; No Effect Level= 1.3 mg/L
Fathead Minnow 96 Hour Flow-Thru Bioassay
LC50= 6.6; No Effect Level= 2.5 mg/L
Rainbow Trout 14 Day Chronic Bioassay
LC50= 4.6; No Effect Level= 3.3 mg/L
Rainbow Trout 96 Hour Static Acute Bioassay
LC50= 8.7; No Effect Level= 6.5 mg/L
Sheepshead Minnow 96 Hour Static Acute Bioassay
LC50= 20; No Effect Level= 12 mg/L

BIODEGRADATION

BOD-28 (mg/g): 0
BOD-5 (mg/g): 0
COD (mg/g): 17
TOC (mg/g): 6

13 Disposal Considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport Information

DOT HAZARD:	Corrosive to skin
PROPER SHIPPING NAME:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(5-CHLORO-2-METHYL-4-ISOTHIAZOLIN -3-ONE)
	8, UN 3265, PG II

DOT EMERGENCY RESPONSE GUIDE #: 153
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory Information

TSCA:

This is an EPA registered biocide and is exempt from TSCA inventory requirements.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FIFRA REGISTRATION NUMBER:

3876- 143

FOOD AND DRUG ADMINISTRATION:

The ingredients in this product are approved by FDA under 21 CFR 176.300.

USDA FOOD PLANT APPROVALS:

SEC.G7

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
10377-60-3	MAGNESIUM NITRATE	2.0-5.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other Information

NFPA/HMIS		CODE TRANSLATION
Health	3	Serious Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	CORR	DOT corrosive
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	03-OCT-1997		** NEW **
	02-DEC-1997	15	03-OCT-1997
	23-DEC-1997	15	02-DEC-1997
	01-MAY-1998	15;EDIT:9	23-DEC-1997
	08-APR-1999	;EDIT:9	01-MAY-1998
	17-MAY-2001	4,16	08-APR-1999
	16-MAY-2006	10	17-MAY-2001
	22-MAR-2007	9	16-MAY-2006
	29-JUN-2007	5,6,8,10,16	22-MAR-2007

GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 20-FEB-2002

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

SPECTRUS OX1200

PRODUCT APPLICATION AREA:

SOLID MICROBIAL CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
16079-88-2	1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN Oxidizer; irritant (eyes and skin)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

DANGER

Moderately irritating. May be corrosive in contact with moist skin. Severe irritant to the eyes. Dusts cause irritation to the upper respiratory tract.

DOT hazard: Oxidizer
Emergency Response Guide #140
Odor: Slight; Appearance: White, Granules

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: Flood with water. Use of CO2 or foam may not be effective.

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Moderately irritating. May be corrosive in contact with moist skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Dusts cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause severe irritation or burning of the gastrointestinal tract.

TARGET ORGANS:
Repeated skin contact may cause sensitization.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

4 FIRST AID MEASURES

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:
Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
Flood with water. Use of CO2 or foam may not be effective.
HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
FLASH POINT:
> 200F > 93C P-M(CC)
MISCELLANEOUS:
Oxidizer
UN1479;Emergency Response Guide #140

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Product releases chlorine when wet. Spill residue may be neutralized with 3% hydrogen peroxide solution.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Dispose of in approved pesticide facility or according to label instructions.

7 HANDLING & STORAGE

HANDLING:
Oxidizer. Avoid all contact with reducing agents, oils, greases, organics and acids.
STORAGE:
Keep containers closed when not in use. Keep dry. Do not store at high temperature or near oxidizables or combustibles.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters.
SKIN PROTECTION:
gauntlet-type neoprene gloves, chemical resistant apron--

Wash off after each use. Replace as necessary.

EYE PROTECTION:

airtight chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Density	NO DATA	Vapor Pressure (mmHG)	< 1.0
Freeze Point (F)	NA	Vapor Density (air=1)	< 1.00
Freeze Point (C)	NA		
Viscosity(cps 70F,21C)	NA	% Solubility (water)	0.2

Odor	Slight
Appearance	White
Physical State	Granules
Flash Point P-M(CC)	> 200F > 93C
pH 5% Disp. (approx.)	4.7
Evaporation Rate (Ether=1)	< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Slowly releases halogen gases when contaminated with moisture. May react with alkalies, acids, organics or reducing agents.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: 578 mg/kg

NOTE - 600 mg/kg per alt. source; dehalogenated byproduct rat oral LD50: >4,000 mg/kg

Teratology RAT:

NOTE - Dehalogenated byproduct study had terata (secondary) at maternal toxic doses

Reproductive Toxicity RAT: 4,500 mg/kg/day

NOTE - Dehalogenated byproduct study had no adverse reproductive toxicity

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Alternate source concurs

Inhalation LC50 RAT: 1.88 mg/L/4hr

NOTE - >3.2 mg/L/4hr at 100 ppm (no deaths) per alternate source

Skin Irritation Score RABBIT: 6.1

NOTE - 6.98 per alternate source; reversible; dehalogenated byproduct score: 0.8

Eye Irritation Score RABBIT: 103

NOTE - 14 day-irreversible-max.at day 3; dehalogenated byproduct score: 12.8-reversible

90 Day Feed Study RAT:

NOTE - Dehalogenated byproduct 90-day oral LD50: >2,000 mg/kg/day

Skin Sensitization G.PIG: POSITIVE

NOTE - Buehler Test; Dehalogenated byproduct was negative in Buehler Test

Ames Assay BACTERIA: NEGATIVE

NOTE - +/- metabolic activation; Dehalogenated byproduct: negative

Non-Ames Mutagenicity YEAST: NEGATIVE

NOTE - Dehalogenated byproduct negative for: Mouse Lymphoma, SCE, Cell Transformation

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Acute Bioassay
LC50= .47; No Effect Level= .31 mg/L

Fathead Minnow 96 Hour Static Acute Bioassay
LC50= 2.34; No Effect Level= 1.8 mg/L

Rainbow Trout 96 Hour Static Acute Bioassay
LC50= .9; No Effect Level= .52 mg/L

Sheepshead Minnow 96 Hour Static Acute Bioassay
LC50= 20.8; No Effect Level= 11.6 mg/L

BIODEGRADATION

BOD-28 (mg/g): 11
BOD-5 (mg/g): 6
COD (mg/g): 938
TOC (mg/g): 255

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D001=Ignitable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD: Oxidizer
UN / NA NUMBER: UN1479
DOT EMERGENCY RESPONSE GUIDE #: 140

15 REGULATORY INFORMATION

TSCA:

This is an EPA registered biocide and is exempt from TSCA inventory requirements.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FIFRA REGISTRATION NUMBER:

3876- 150

FOOD AND DRUG ADMINISTRATION:

21 CFR 176.300 (slimicides for wet end use)
When used in this specified application, all ingredients comprising this product are authorized by FDA for the manufacture of paper and paperboard that may contact aqueous and fatty foods as per 21 CFR 176.170(a)(4).

USDA FOOD PLANT APPROVALS:

SEC.G5,G7

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic);Fire;Reactive

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		**CODE TRANSLATION**
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	1	Slight Hazard
Special	OXY	DOT or NFPA Oxidizer
(1) Protective Equipment	C	Goggles,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	24-SEP-1997		** NEW **
	03-OCT-1997	8	24-SEP-1997
	02-DEC-1997	15	03-OCT-1997
	23-DEC-1997	15	02-DEC-1997
	15-JAN-1998	15	23-DEC-1997
	01-JUL-1998	15	15-JAN-1998
	14-SEP-1999	;EDIT:9	01-JUL-1998
	11-MAY-2000	4;EDIT:9	14-SEP-1999
	22-SEP-2000	8	11-MAY-2000
	22-MAR-2001	15	22-SEP-2000
	01-JUN-2001	15	22-MAR-2001
	18-FEB-2002	3,4	01-JUN-2001
	19-FEB-2002	3,4	18-FEB-2002
	20-FEB-2002	3,4	19-FEB-2002

GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 24-MAR-2005

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

CONTINUUM AEC3152

PRODUCT APPLICATION AREA:

WATER-BASED CORROSION INHIBITOR/DEPOSIT CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
202420-04-0	CHLOROTOLYLTRIAZOLE SODIUM SALT Potential irritant
1310-73-2	SODIUM HYDROXIDE (CAUSTIC SODA) Corrosive; toxic (by ingestion)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable

Emergency Response Guide is not applicable
Odor: Mild; Appearance: Amber To Brown, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause slight gastrointestinal irritation.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

4 FIRST AID MEASURES

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:
> 200F > 93C P-M(CC)

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 HANDLING & STORAGE

HANDLING:
Alkaline. Do not mix with acidic material.

STORAGE:
Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

CHLOROTOLYLTRIAZOLE SODIUM SALT
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

SODIUM HYDROXIDE (CAUSTIC SODA)
PEL (OSHA): 2 MG/M3
TLV (ACGIH): 2 MG/M3(CEILING)

ENGINEERING CONTROLS:
adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:
neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav.(70F,21C)	1.234	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	21	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-6		
Viscosity(cps 70F,21C)	32	% Solubility (water)	100.0

Odor Mild

Appearance		Amber To Brown
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		13.3
Evaporation Rate (Ether=1)		ND

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY
Daphnia magna 48 Hour Acute Toxicity (Estimated)
LC50= 960; No Effect Level= 620 mg/L
Fathead Minnow 96 Hour Acute Toxicity (Estimated)
LC50= 370; No Effect Level= 140 mg/L

BIODEGRADATION
BOD-28 (mg/g): 27
BOD-5 (mg/g): 14
COD (mg/g): 275
TOC (mg/g): 112

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD:	Not Applicable
UN / NA NUMBER:	Not applicable
DOT EMERGENCY RESPONSE GUIDE #:	Not applicable

15 REGULATORY INFORMATION

TSCA:
All components of this product are listed in the TSCA inventory.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
No regulated constituent present at OSHA thresholds
SARA SECTION 312 HAZARD CLASS:
Immediate(acute)
SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds
SARA SECTION 313 CHEMICALS:
No regulated constituent present at OSHA thresholds
CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:
No regulated constituents present
MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	09-NOV-1998		** NEW **
	08-JAN-1999	2,8,15	09-NOV-1998
	11-JAN-1999	2,8,15	08-JAN-1999
	05-MAR-1999	15	11-JAN-1999
	08-MAR-1999	;EDIT:9	05-MAR-1999
	29-APR-1999	12	08-MAR-1999
	24-MAR-2005	2	29-APR-1999

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 29-JUN-2007
Supercedes: 25-JAN-2007

SPECTRUS NX114

1 Identification of Product and Company

Identification of substance or preparation
SPECTRUS NX114

Product Application Area
Biocide

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: 215 355-3300

2 Composition / Information On Ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range(w/w%)
52-51-7	2-BROMO-2-NITROPROPANE-1,3-DIOL Toxic (by ingestion); irritant (eyes); potential sensitizer (skin)	5-10
10377-60-3	MAGNESIUM NITRATE Oxidizer; irritant (eyes and skin)	3-7
26172-55-4	5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE Corrosive; toxic (by ingestion and skin absorption); sensitizer (skin)	1-5
7786-30-3	MAGNESIUM CHLORIDE Potential irritant	1-5

3 Hazards Identification

****

EMERGENCY OVERVIEW

DANGER

Corrosive to skin. Skin sensitizer with delayed onset of symptoms. Corrosive to the eyes. Mists/aerosols cause irritation to the upper respiratory tract.

DOT hazard: Corrosive to skin/steel
Odor: None; Appearance: Colorless To Yellow Green, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Corrosive to skin. Skin sensitizer with delayed onset of symptoms.

ACUTE EYE EFFECTS:
Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause severe irritation or burning of the gastrointestinal tract.

TARGET ORGANS:
Prolonged or repeated exposures may cause tissue necrosis and/or skin sensitization.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Direct contact with skin will cause severe delayed skin reactions or burns if not washed off immediately- follow first aid instructions.

4 First Aid Measures

SKIN CONTACT:
URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:
Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:

Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 Fire Fighting Measures

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon, nitrogen, and sulfur; hydrogen chloride; and hydrogen bromide

FLASH POINT:

> 200F > 93C P-M(CC)

MISCELLANEOUS:

Corrosive to skin/steel

UN 3265;Emergency Response Guide #153

6 Accidental Release Measures

PROTECTION AND SPILL CONTAINMENT:

WARNING: Keep spills and clean-up residuals out of municipal sewers and open bodies of water. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Dispose of in approved pesticide facility or according to label instructions.

7 Handling & Storage

HANDLING:

Corrosive to skin. Corrosive to eyes.

STORAGE:

Keep containers closed when not in use. Protect from freezing. If frozen, thaw and mix completely prior to use. Shelf life 360 days.

8 Exposure Controls / Personal Protection

EXPOSURE LIMITS

CHEMICAL NAME

2-BROMO-2-NITROPROPANE-1,3-DIOL

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

MAGNESIUM NITRATE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED
MISC: Note-mfg. sugg. exp. limit:0.1 mg/m3 TWA;0.3mg/m3 STEL total isothiazoline).

MAGNESIUM CHLORIDE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use organic vapor cartridges and any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.
SKIN PROTECTION:
gauntlet-type butyl gloves, chemical resistant apron-- Wash off after each use. Replace as necessary.
EYE PROTECTION:
splash proof chemical goggles, face shield

9 Physical & Chemical Properties

Specific Grav.(70F,21C)	1.107	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	24	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-4		
Viscosity(cps 70F,21C)	10	% Solubility (water)	100.0

Odor		None
Appearance		Colorless To Yellow Green
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		3.0
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability & Reactivity

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong reducing agents.
DECOMPOSITION PRODUCTS:
oxides of carbon, nitrogen, and sulfur; hydrogen chloride; and hydrogen bromide
INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11 Toxicological Information

Oral LD50 RAT:	1,030 mg/kg
Dermal LD50 RABBIT:	>2,000 mg/kg
Skin Irritation Score RABBIT:	CORROSIVE
Eye Irritation Score RABBIT:	CORROSIVE
Skin Sensitization G.PIG:	NEGATIVE

12 Ecological Information

AQUATIC TOXICOLOGY

Ceriodaphnia 48 Hour Static Renewal Bioassay
LC50= 4.7; No Effect Level= .63 mg/L
Daphnia magna 48 Hour Static Renewal Bioassay
LC50= 5; No Effect Level= 2.5 mg/L
Fathead Minnow 96 Hour Static Renewal Bioassay
LC50= 3.5; No Effect Level= 1.8 mg/L
Mysid Shrimp 48 Hour Static Renewal Bioassay
LC50= 40.5; No Effect Level= 18 mg/L
Sheepshead Minnow 96 Hour Static Renewal Bioassay
LC50= 26.7; No Effect Level= 15.5 mg/L

BIODEGRADATION

BOD-28 (mg/g): 4
BOD-5 (mg/g): 2
COD (mg/g): 78
TOC (mg/g): 29

13 Disposal Considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(steel).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport Information

DOT HAZARD: Corrosive to skin/steel
PROPER SHIPPING NAME: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(5-CHLORO-2-METHYL-4-ISOTHIAZOLIN -3-ONE)
8, UN 3265, PG II
DOT EMERGENCY RESPONSE GUIDE #: 153
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory Information

TSCA:
This is an EPA registered biocide and is exempt from TSCA inventory requirements.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
No regulated constituent present at OSHA thresholds

FIFRA REGISTRATION NUMBER:
3876- 151

FOOD AND DRUG ADMINISTRATION:
21 CFR 176.300 & 176.170 (slimicides and as a preservative) When used in this specified application, all ingredients comprising this product are authorized by FDA for the manufacture of paper and paperboard that may contact aqueous and fatty foods as per 21 CFR 176.170(a)(4).

USDA FOOD PLANT APPROVALS:
SEC.G5,G7

SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic)

SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
10377-60-3	MAGNESIUM NITRATE	2.0-5.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):
No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other Information

NFPA/HMIS		CODE TRANSLATION
Health	3	Serious Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	CORR	DOT corrosive
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES

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MSDS status:	18-SEP-1997		** NEW **
	26-FEB-1998	12	18-SEP-1997
	20-MAY-1998	15	26-FEB-1998
	22-MAY-1998	2	20-MAY-1998
	07-JUL-1998	12	22-MAY-1998
	15-DEC-1998	7	07-JUL-1998
	01-APR-1999	12	15-DEC-1998
	05-NOV-1999	12	01-APR-1999
	11-MAY-2001	4	05-NOV-1999
	17-JAN-2002	10	11-MAY-2001
	29-SEP-2003	15	17-JAN-2002
	14-JUN-2005	3.9	29-SEP-2003
	04-JAN-2007	2,5,7,10	14-JUN-2005
	25-JAN-2007	5,9,13	04-JAN-2007
	29-JUN-2007	6,8,16	25-JAN-2007